

and on the following week-days at 8 a.m. to 6 p.m. On Sunday, September 9, the Reception Rooms will be open from 9 to 10.30 a.m., and from 3 to 5 p.m.

The temporary Museum in connection with the Sections is this year being made a special feature, more particularly in regard to Geology, Botany and Zoology. Joint meetings are being held, on certain days, of the Geological and Botanical Sections, to take up the subject of Carboniferous fossils, and it is proposed to form a collection of fossils found in the neighbourhood to illustrate the papers as much as possible; and also to display photographs bearing on the subject, taken from the Geological Society's collection in London. These exhibits will form the nucleus of the Museum, but there will also be other collections bearing on the main subjects dealt with by some of the other Sections. At the Municipal Technical College there will be an Exhibition during the week illustrative of the staple trades of the district; visitors will pass from room to room, and will see the gradual development, through innumerable processes, of the most elaborate fabrics from the unwashed fleeces. On Thursday afternoon, September 6, the Exhibition will be opened by Mr. W. E. B. Priestley, the chairman of the College, and a Reception held, to which all visitors to the meeting will be invited.

The preparations for the Excursions and Garden-parties are nearly complete, and full details will be given in the next article.

RAMSDEN BACCHUS.

NOTES.

PROF. R. LIPSCHITZ, professor of mathematics in the University of Bonn, has been elected a correspondant in the section of geometry of the Paris Academy of Sciences.

LORD KELVIN has been elected Master of the Worshipful Company of Clothworkers for the year 1900-1901.

SIR JOHN EVANS, K.C.B., F.R.S., has been elected chairman of the Society of Arts for the ensuing year.

MR. GRANT-OGILVIE, principal of the Heriot-Watt College, has been appointed director of the Museum of Science and Art, Edinburgh.

THE sixty-eighth annual meeting of the British Medical Association will be held at Ipswich during next week, commencing on Tuesday.

DR. M. ARMAND RUFFER, president of the sanitary, maritime, and quarantine board of Egypt, has received from His Majesty the Sultan of Turkey the Order and Insignia of the Medjidjieh of the Second Class.

A CONFERENCE on the housing of the working classes, under the auspices of the Sanitary Institute, will be held on July 30 and 31, in the lecture-room of the Royal Medical and Chirurgical Society. In connection with the conference an exhibition of models and plans will be held in the Parkes Museum.

IT is stated in the *Engineer* that of the fifty-five ships taking part in the naval manœuvres this year, the *Adrienne*, *Camperdown*, *Jaseur*, besides some others, are specially fitted for wireless telegraphy. The *Majestic* and the *Diadem* have also been fitted. Torpedo officers have charge of the installation in each case.

THE thirty-seventh annual meeting of the British Pharmaceutical Conference was opened in London on Monday, under the presidency of Mr. E. M. Holmes. An attractive programme containing illustrations of the house of the Pharmaceutical Society where the meetings will be held, the president, and places to be visited, appears as a supplement to the current number of the *Pharmaceutical Journal*.

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WE learn from the *British Medical Journal* that the Madras Government has passed an order sanctioning the excess expenditure over the original grant of 600 rupees incurred by Capt. R. H. Elliott in connection with the prosecution of his researches into the properties of snake venom, and has made him an additional grant of 200 rupees to cover the cost of further experiments. The Surgeon-General has been requested to report if Capt. Elliott's services will be available for special duty at the end of September when his tour of service terminates.

PROF. HENRY F. OSBORN has been appointed to succeed the late Prof. O. C. Marsh as palæontologist in the United States Geological Survey. Prof. Osborn's special field of work will be to take charge of the vertebrate palæontology of the survey, especially with reference to the completion of the monographs for which the illustrations were prepared under the direction of Prof. Marsh. Prof. Osborn graduated from Princeton in 1877, and was professor of comparative anatomy there until 1890. He was appointed Da Costa Professor of Zoology at Columbia University in 1891, and curator of vertebrate palæontology at the American Museum of Natural History, New York. He is a member of the National Academy of Sciences and other scientific bodies, and is the author of numerous papers and memoirs on fossil mammals and reptiles.

THE seventy-second annual meeting of the German Association of Naturalists and Physicians will be opened at Aachen on Monday, September 17. At the first general meeting, the advances of natural knowledge and medicine during the present century will be surveyed. Prof. van 't Hoff will review the progress of inorganic science; Prof. O. Hertwig will discourse on the development of biology; Prof. B. Naunyn will deal with internal medicine, including bacteriology of hygiene; and Prof. H. Chiari will speak on pathological anatomy in relation to external medicines. At the second general meeting, to be held on September 31, several scientific subjects of current interest will be dealt with. Prof. J. Wolff will speak on the correlation between form and function of individual structures of organisms; Prof. E. v. Drygalski will describe the plan and purpose of the German Antarctic expedition; Prof. D. Hansemann will discourse upon cell-problems and their significance in the scientific foundation of the treatment of disease; and Prof. Holzaphel will take as his subject the development of German coal-measures. On September 19, the naturalists and physicians will meet in separate groups. The questions to be brought before the former group include the circulation of nitrogen in the organic world, by Prof. M. W. Beyerink; the latest investigations upon steel, by Prof. E. F. Dürre; and language and technical teaching from a scientific standpoint, by Prof. Pietzker. The chief subject to be discussed in the medical section is the neuron theory in its anatomical, physiological and pathological aspects, by Profs. Verworn and Nissl. The remainder of the meetings will be held in the various sections of the Association, and as more than three hundred communications will be made, there will be no lack of subjects for discussion. In connection with the meeting, an exhibition of physical, chemical, and medical preparations and apparatus will be held.

IN the course of his presidential address, delivered to the Society of Chemical Industry on July 18, Prof. Chandler referred to some of the work of American chemists, and the development of chemical processes of manufacture. Many important investigations in agricultural chemistry have been conducted by the chemical division of the United States Department of Agriculture, among them being the practical determination of the number and activity of the nitrifying organisms in soil, the influence of a soil rich in nitrogen on the nitrogen content of a crop, the manufacture of sugar from the sorghum plant, and the comparative study of typical soils of the United

States. Of agricultural experiment stations there are now 59, and the 148 chemists connected with them have done a large amount of original investigation in subjects more or less closely allied to agricultural and physiological chemistry. Prof. Chandler gave a comprehensive account of the chemical industries. In particular he referred to the progress made in electro-chemistry, and described the methods now adopted for the reduction of aluminium at Niagara, and also for the manufacture of carborundum and artificial graphite. Speaking of water-gas, he described the opposition against its introduction for illuminating purposes. The question came before the Health Department of New York, and, after careful investigation, the department decided that the gas was such an improvement in quality and price, while the increased danger as compared with that from old-fashioned coal-gas was so slight, that it was not wise to interfere with it. The water-gas industry has now taken almost complete possession of the whole country. There are at least 500 gas companies using water-gas wholly or in part, and it is estimated that in 1899 three-quarters of the entire consumption, or 52,500 million cubic feet, consisted of carburetted water-gas. At the close of the address the Society's medal, which is awarded not oftener than every two years, was presented to Dr. Edward Schunck, F.R.S., in recognition of his classical investigations on natural colouring matters and other researches in connection with technical chemistry.

WE learn from the *Times* that the Select Committee to which the Sea Fisheries Bill was referred, presented a special report to the House of Commons on Thursday last expressing the view that it would not be expedient to pass the measure into law without further inquiry and investigation. The committee regards it as proved beyond the possibility of dispute that there is a very great and serious diminution of the fish supply, that the ancient fishing grounds are much depleted, and that in default of a remedy the consequences to the fishing industry and the fish supply will at no very distant future be disastrous. The prohibition of the taking and killing of such fish is described as practically impossible without prohibiting trawling altogether. As regards the prohibition of fishing within certain areas where small fish more particularly abound, the Committee thinks that it is established that there are certain well-known areas in the North Sea where undersized small and young fish congregate, and that to prevent fishing in such areas would be of great value. It is pointed out, however, that such a result could not be obtained without joint international action among the Powers bordering the North Sea, and that the difficulties of such international action and the policing necessarily ancillary thereto are obvious. In conclusion, the Committee considers that no effort ought to be spared—first, to arrange for international treatment of the subject generally, and especially for regulation of the North Sea area; and, secondly, to provide for the adequate equipment of the Government department in charge of the subject, so that it may effectively pursue scientific investigation, and ascertain with sufficiency and precision what has been done in the way of scientific research or in the matter of practical legislation by other inquirers and by other countries.

MR. E. H. L. SCHWARZ sends us from Cape Town some interesting remarks upon the snake-stone, *apropos* of the facts stated by Mr. Hervey in *NATURE* of May 24 (p. 79) as to the use of a stone by the Malays as a remedy for poisonous bites. Snake-stones are fairly common in South Africa, and are described as white, porous stones, which, when applied to the place where the snake has bitten a person, adhere till all the poison is drawn out into them, after which they are placed in milk, which in turn draws the poison from the stones, and renders them again fit for use. The farmers firmly believe they are taken from

the head of a snake. It is suggested that snake-stones are made of pumice. To the uneducated, the structure of pumice has a close resemblance to that of bone, and this may possibly explain the popular delusion that snake-stones are made of bone. Mr. Schwarz thinks that the black colour of the stone, described by Mr. Hervey, may have been due to blood, or the stone may have been a black variety of pumice, for there is an instance of originally black pumice having been thrown up near the lighthouse on Cape Agulhas. The fact that the fable of the stone having been taken from the head of a snake is exactly the same in the Malay States as is prevalent in South Africa is interesting, though the Malay slaves which the early Dutch obtained from Batavia in exchange for quaggas, zebras, ivory, &c., may have carried the legend with them. It is not an uncommon custom in Germany for people to carry about with them nuggets of raw gold to draw out of their bodies all the more subtle evils, such as those produced by spirits and devils, while for the grosser evils they carry a potato. Is the snake-stone legend a derivative of these, or are they subsequent to the snake-stone?

MAGNETIC observations were made at several stations upon the day of the recent total solar eclipse (May 28), under the direction of Dr. L. A. Bauer. A brief statement of the results is given in *Terrestrial Magnetism*. Ten observers were engaged in the work, and eight complete series of observations were obtained—seven for declination and one for horizontal intensity. All the stations show a magnetic effect, which cannot be referred to any other cause than that of the eclipse, the principal effect occurring, like the fall in temperature, some minutes after time of totality. The effect is as though part of the night hours were interposed among the day hours, e.g. the declination at all of the stations having passed the morning elongation and approaching the mean value of day, is *increased* about 20"–40" if the declination be east, and *decreased* if the declination be west; whereas, the horizontal intensity approaching at the time its minimum value for the day, is *increased* for a brief period after time of totality. The observations and results will be published in full in a *Bulletin* of the U.S. Coast and Geodetic Survey.

THE hot and dry spell which set in over a fortnight ago promises still to continue, and although the mid-day temperatures are not generally as high as they were on several days last week, they are far in excess of the average. There have been three days at Greenwich with the shade temperature above 90°, the highest reading as yet being 94° on July 16. The nights are also excessively warm, and on the night of July 22–23 the lowest reading at Greenwich was 67°·6, which is warmer than any night in July or August at Greenwich since August 8, 1846, when the thermometer did not fall below 68°. During the last week there have been five successive nights without the thermometer falling as low as 60°. There has been no rain in London for three weeks, and the same dry weather has been experienced generally in the south-east of England. The conditions have been less settled over the northern and western portions of our islands, where rain has fallen at frequent intervals and no very extreme temperatures have occurred.

FROM Dr. Oliver Lodge, F.R.S., we have received the reprint of a very suggestive lecture on "Modern Views of Matter," delivered before the Literary and Philosophical Society of Liverpool in March last. In it Dr. Lodge discusses the atomic theory, the ether, the conception of "electrons," and the still more recent hypothesis of the existence of "corpuscles."

ARRANGEMENTS have been made for six popular science lectures for young people, under the general title of "The World we Live On," to be delivered in Kensington Town

Hall during October and November next, and we have no doubt they will be as "instructive and entertaining" as the programme promises, for the lecturers are all experienced exponents of science. The quotation "Pupils trained on books, and books alone, are mere passive recipients of other people's ideas," which we notice on the programme, is not a very happy one; for popular audiences are, after all, only "passive recipients" of the ideas of the lecturer. Popular lectures upon scientific subjects direct attention to natural phenomena, and occasionally induce people to devote serious attention to some branch of science. On this account they are valuable, but there is of course a great difference between listening to an eloquent lecturer, or witnessing striking demonstrations, and actually carrying out the most elementary experiments.

WRITING to Sir Henry Burdett with reference to Mr. Craggs's endowment of a travelling scholarship in connection with the London School of Tropical Medicine, Mr. Chamberlain recently remarked:—"My experience at the Colonial Office daily impresses upon me the extreme importance of doing something to make life in our tropical colonies more healthy for those who are engaged there in the work of civilisation, whether as administrators, missionaries or traders. Science has already given us promise of good results in the near future, and nothing, I believe, can conduce more powerfully to a speedy and satisfactory result than such researches as those which Mr. Craggs has in contemplation. I hope that his munificent action may be followed by other benefactors, so that the work may be simultaneously pursued in different countries." The scholarship is one of 300*l.* per annum, tenable for three years, and is for research in tropical disease. The first scholar is now attached to an expedition which is engaged in attempting to give practical application to the theory of the inoculation of the human being with the malaria parasite through the medium of the mosquito. The expedition has been equipped by the Colonial Office and is now stationed in one of the most malarious districts of the Roman Campagna. When this experiment is completed, at the expiration of six months, the scholar will proceed to the West Indies, thence to the West Coast and probably to the interior of Africa.

THE fourteenth volume (for the year 1898) of the *Analele* of the Meteorological Institute of Roumania has just been published. Besides the usual tables, it contains several important memoirs. M. St. Murat compares the magnetic instruments of the Institute with those of the Observatory of Parc St. Maur, and describes the observations made during 1898. The director, Dr. Hepites, studies the climatology of Braila and of the Roumanian littoral of the Black Sea, the distribution of rainfall in Roumania during 1898 (this paper being illustrated by a series of monthly maps), and the earthquakes during the same year. Brief accounts are given of eleven shocks, all of them of very slight intensity.

It appears from Part ii. of the Eighteenth Annual Report of the Fishery Board for Scotland that the salmon fishery for 1899 turned out considerably below the average of recent years. It is true that the weight of salmon forwarded by rail and steamship during the year was slightly in excess of that carried in 1898, but it was still 638 tons below the average; and such slight improvement as took place is attributed to the large run of grilse which occurred during the summer. Adult fish seem to have been comparatively scarce. As the inspector remarks, it is absolutely essential to the continuance of the Scottish salmon fisheries that a stock of breeding fish sufficient to counterbalance the loss caused by fishing, by the salmon's natural enemies and by disease, must be maintained by some means or other. It is satisfactory to learn that some proprietors

have established hatching-stations in order to artificially increase this supply. The inspector is, however, of opinion "that if the present catching power continues to be developed, a very great increase in the number and in the capacity of hatcheries will be necessary to produce noticeable results." In artificially augmenting the stock of salmon we must necessarily be prepared to compete with a vast mortality.

AMONG several papers interesting to entomologists in the June number of the *Agricultural Gazette of New South Wales*, reference may be made to one by Mr. W. W. Froggatt, the Government entomologist, on insects living in figs. The interiors of young wild figs in all countries swarm with minute plant-feeding Hymenoptera of the family Chalcidæ. The males and females of these minute insects differ from one another in colour, size and shape; but the peculiar feature of the group is that, instead of the females being degraded into a wingless condition, it is the males that are devoid of wings, while they are also frequently blind, with abnormally short legs and aborted antennæ. A new Australian species is described and figured.

IN the *Victorian Naturalist* for June, Mr. Robert Hall gives an interesting account of the nesting habits of one of the Australian diamond-birds (*Pardalotus assimilis*). In common with some of their kindred, these birds make their nests at the end of a tunnel drilled by themselves in a bank. "The nest is made to fit in a cavity with a domed ceiling, excavated in the hard subsoil at the end of the tunnel. This tunnel is ten inches long, and is drilled with a slight upward tendency, as is usual in most ground-boring birds. The nest entrance is two feet below the surface of the ground, and in a creek-bank some nine feet above a stream." Both sexes take part in the drilling operations, one excavating while the other removes the rubbish, but it seems that the task of incubation falls to the share of the male.

IN the June issue of the *Johns Hopkins University Circulars* will be found an important communication by Mr. L. E. Griffinn on the arterial circulation in the nautilus.

WE learn from the *Bulletin* of the New York Botanic Garden that the herbarium has acquired during the year specimens to the number of 70,000, and that over 4000 species and varieties of plants, belonging to 172 families and 1057 genera, are under cultivation in the Garden.

WE have received Supplement ix. to the *Journal of Reading College*, consisting of the sixth annual report on field experiments (for 1899), viz.:—field experiments in Dorset, Berkshire, Oxfordshire and Hampshire; spraying experiments on charlock; trials with sugar-beet; the manuring of crops; and notes on manures.

CONTRIBUTIONS from the Gray Herbarium of Harvard University, New Series No. 19, consists of a synopsis of the Mexican and Central American species of *Salvia*; a revision of the Mexican and Central American *Solanums* of the sub-section *Torvaria*; and some undescribed Mexican plants (chiefly Labiatæ and Solanacæ), all by Mr. M. L. Fernald.

HERR PAUL SINTENIS announces that he is undertaking a botanical exploration of the mountain region on the confines of Turkestan and Persia, of the flora of which district very little is at present known. The expedition will probably extend through the present year. Application for sets of the plants collected should be made to Herr Baurath J. Freyn, Smichow-Prague.

THE Agricultural and Mechanical College of Texas, judging from the annual "Catalogue" for the session 1899-1900, is a well-appointed and flourishing institution. Full information as

to the various departments of the college, courses of study, &c., is to be found in the "Catalogue," which also contains many full-page illustrations of the college buildings, interiors of the laboratories, &c.

THE *Journal* of the Straits branch of the Royal Asiatic Society for January, 1900, contains, *inter alia*, an important contribution by Mr. H. N. Ridley on the flora of Singapore. The district is a rich one, something like 1900 flowering plants, and 130 ferns being recorded. Mr. Ridley opens with an interesting introduction, in which he gives a sketch of the factors which determine or modify the vegetation. He also describes some interesting phenological facts, and finally gives a sketch of the history of the botanical work in the Island. The chief space is, of course, devoted to an enumeration of the plants, but it contains short notes respecting the more striking individual species.

THE revised edition of "First Records of British Flowering Plants," by Mr. W. A. Clarke, just published by Messrs. West, Newman and Co., is full of extracts of interest to every one who finds pleasure in the study of the British flora. To members of Field Clubs and Natural History Societies the book is particularly valuable. It gives, in the form of extracts from printed botanical works published in Great Britain, the earliest notice of each distinct species of our native and naturalised plants, the last edition of the "London Catalogue" being taken as a basis. The volume thus provides a concise answer to the question which a naturalist often asks, viz.: "How long has this plant been known as British?" An interesting analysis of the "first records" is given at the end of the book. William Turner was the first to record the majority of our native plants. His works, ranging from 1538 to 1568, contain notices of 238 flowering plants, and may be considered the foundation of our British flora. From Lobel (1570, &c.), Mr. Clarke obtains eighty first records and from Gerard's famous *Herball* (1597), 182 species, so that about 500 species of British plants were known and described three hundred years ago. The book in which these and many other particulars are given is one which every naturalist should keep handy for reference.

THE *Proceedings* of the London Mathematical Society (vol. xxxi.), containing papers read from April to December of last year, have just been published by Mr. Francis Hodgson. The titles and brief abstracts of the papers have already appeared among our reports of societies.

THE Great Eastern Railway Company's "Tourist Guide to the Continent," edited by Mr. Percy Lindley, contains concise notes and numerous illustrations of interesting and easily accessible places in Holland, Belgium, Germany, Switzerland, Norway, Denmark and Sweden. The book is a useful travelling companion for Continental tourists, and is as matter-of-fact as most guide-books.

THE volume of *Proceedings* of the forty-eighth meeting of the American Association for the Advancement of Science, held at Columbus a year ago, has just been received. The presidential addresses, papers and abstracts cover a wide field of scientific work. A noteworthy feature is the series of portraits of former presidents of the Association, accompanying an address by Dr. Marcus Benjamin.

THE value of a well chosen set of inorganic chemical preparations as a part of a course of general chemistry is now generally acknowledged, although the number of elementary text-books dealing with this branch of the subject is comparatively small. The works of Prof. Erdmann, of Halle, in this field are well known, and the English translation of his "Introduction to Chemical Preparations" (Chapman and Hall)

by Dr. F. L. Dunlap, the German edition of which has already been noticed in these columns, will be of great service to students in England and America.

THE seventh part of vol. ii. of the seventh edition of Fresenius's "Quantitative Chemical Analysis," translated from the revised sixth edition by Mr. C. E. Groves, F.R.S., has just been published by Messrs. J. and A. Churchill. This completes the new edition of the work, which has been revised throughout. The special part, dealing largely with applications of chemical analysis to industrial products and other technical matters, has been considerably extended, and many new analytical processes have been introduced. The last section of the work includes sixty exercises especially designed for teaching the theory and practice of quantitative chemical analysis. In addition, there is an appendix containing analytical notes and tables for the calculation of analyses. Practical chemists and teachers are thus now provided with a complete new edition of a standard work on analysis.

THE reaction discovered by Lubawin of the formation of α -amino-acids by the interaction of ammonium cyanide and aldehydes, has been extended by Dr. W. Gulewitsch to ketones, and in the current number of the *Berichte* he describes the details of the preparation of α -amino-isobutyric acid from acetone, the yield under favourable conditions being as high as 74 per cent. of the theoretical. The same number of the *Berichte* also contains a masterly investigation of the action of soda solution upon nitroso-benzene by Prof. Bamberger. No less than twelve substances have been isolated from the products of this extremely complex reaction, including azoxybenzene, nitrobenzene, aniline, *p*-nitrosophenol, *o*-amidophenol, *p*-amidophenol, hydrocyanic acid, ammonia, and four new acids, and there are still further products awaiting investigation.

THE additions to the Zoological Society's Gardens during the past week include a Bonnet Monkey (*Macacus sinicus*) from India, presented by Mr. P. M. Thornton; a Rhesus Monkey (*Macacus rhesus*) from India, presented by Miss A. N. Ball; a Humboldt's Lagotherix (*Lagotherix humboldti*) from the Upper Amazons, presented by Mr. W. S. Churchill; two Masked Paradoxures (*Paradoxurus larvatus*) from China, presented by Mr. W. T. Lay; a Senegal Parrot (*Poeocephalus senegalus*) from West Africa, presented by Mr. S. Cordwell; two Chukar Partridges (*Caccabis chukar*) from North-west India, presented by Mr. Chas. E. Pitman; a Missel Thrush (*Turdus viscivorus*), European, presented by Mr. J. B. Williamson; a Common Cuckoo (*Cuculus canorus*), British, presented by Miss Lucy Holland; two Larger Hill Mynahs (*Gracula intermedia*) from Northern India, a Mauve-necked Cassowary (*Casuarus violi-collis*) from the Aru Islands, a Clumsy Tortoise (*Testudo inepta*) from Mauritius, four Elephantine Tortoises (*Testudo elephantina*) from the Aldabra Islands, an Alligator Terrapin (*Chelydra serpentina*), six Blanding's Terrapins (*Emys blandingi*) from North America, deposited; a Guira Cuckoo (*Guira piririgua*) from Para, six Painted Frogs (*Discoglossus pictus*), South European, purchased.

OUR ASTRONOMICAL COLUMN

ASTRONOMICAL OCCURRENCES IN AUGUST.

- August 4. 11h. 55m. Minimum of Algol (β Persei).
 7. 8h. 43m. " " " "
 7. 5h. Conjunction of Mars and Neptune. (Maas $1^{\circ} 27' N.$)
 9. 11h. 34m. to 12h. 40m. Moon occults the star D.M. - 16, 5609 (mag. 6).
 11. Maximum of August meteoric shower. Perseids. (Radiant $45^{\circ} + 57^{\circ}$).